AMT 25 (Section#11058) and AMT28A (section#11059 and #11060)
Syllabus Spring 2020 Term 1
Powerplant Theory and Maintenance

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Office Hours: Monday through Thursday, 0600-0715, 1415-1430 and by special appointment.

Class time and days: Monday, Tuesday, Wednesday and Thursday. 0715-1415. There is a total of 217 hours available for this class. The instructor will drop the student when 10 percent or 22 hours of absence has been accumulated. This is due to the lack of repeatability of classes per state rules and the FAA hour’s requirement for each class. Each student should be enrolled in a one unit additional lab in order to complete the program in two years. Each student needs to be attending 35 hours per week in order to complete the program in two years.

Required Text: Aircraft Powerplants McGraw-Hill, Kroes and Wild (8th or 9th edition)
              : Powerplant Study Guide ASA
              : Lycoming Overhaul and Parts Manual (Optional)
              : USB memory stick

Lecture schedule: Tuesday, Wednesday and Thursday 0715 to 1045. This is a combination lecture/ lab class and therefore we may deviate from this normal schedule as needed. A break will be from 0900 to 0930 and 1140 to 1220. Do not be late for class! You will be docked time and will be required to make up that same lecture time that was missed. You may not be allowed to enter the classroom if you arrive late.

Classroom Policies: Please silent all watches, pagers, cell phones and anything else that is annoying and will distract the class. Any type of device that creates music is no longer allowed in lab or lecture at any time. Turn off cell phones during both lab and lecture. No texting is allowed. Check them during break. Food and drinks are not allowed in the classroom per campus policy. Computer use for note taking must be approved by the instructor and that proof of those notes will be periodically checked.

Teaching Methods: Lecture will be supported with overheads from the textbooks, videos, computer-based training, power point presentations, and practical hands on experience.

Current Events Project: Each student will bring in a current event article dealing with aviation and be prepared to discuss it in class. This will be worth 2.5 percent. The last day to submit a current event is Tuesday March 3, 2020.

Class Report: Each student will prepare a fifteen minute PowerPoint presentation on an aircraft engine manufacturing, machining, plating, coating, balancing or inspection process. The topic must be approved by the instructor. This will be worth 7.5 percent. An additional 1 percent is available if you pick your subject topic by Thursday January 23, 2020. The subject topic must be submitted in writing on a full sheet of paper with your name and date on it. The last day to present your topic too the class is Wednesday March 4, 2020. Note. You can take the Powerplant Qualification test in lieu of the above presentation and if this is your last 8 weeks in Powerplant and take the Powerplant
qualification test before the last day of class. The grade of your qualification test will be used as your final grade and the presentation grade.

**Class Participation**: 5 percent will be based on your classroom performance. For example; do you stay alert in class and ask questions? Do you distract the class with non-related talking? Are you frequently late or absent?

**Quizzes**: Frequent quizzes will be given at the beginning of many classes. The questions will be based on the reading assignment for that class. They will be graded and returned that same day. Quizzes cannot be made up. The total of all quizzes will be worth 5 percent.

**Tests**: Tests in most cases will consist of multiple choice questions directly from the FAA Powerplant question database. Some tests may include essay type questions. Specific subject tests will be given at the conclusion of each chapter or chapters and will be worth 10 percent each. A comprehensive final will be given at the end of the course and will be worth 10 percent. Tests will not be offered early and no make up tests will be allowed for any reason. One hour will be allowed to take the chapter test. If you are 10 minutes late for the test than you only have 50 minutes to take the test.

**Lecture Schedule**: 1-13/ 2-3 Piston engine theory, overhaul and inspection

- Chapters 1, 2, 9, 3 and 10
  - Test, 10 percent, 100 questions FAA? # 8001-8107, 8228-8256
  - 2-4/ 2-20 Turbine engine theories and maintenance.
  - Chapters 11, 15, 16, 17 and 18
  - Test, 10 percent, 100 questions FAA? # 8108-8227, 8230, 8252, 8255, 8256
  - 3-5 Comprehensive Final, 10 percent, 200 questions

**Holidays**: No class will be held on Monday 1-20 (MLK Holiday), Friday 2-14 and Monday 2-17 Presidents Holiday.

**Reading Assignments**: Read the chapters prior to their corresponding lecture dates throughout the term. This is the order of the reading assignments and the instructor will tell you when to read them.

1. Chapter 1 pages 1-26 Quiz (new 1-26)
2. Chapter 2 pages 27-45 Quiz (new 27-45)
3. Chapter 2 pages 45-56 Quiz (new 45-56)
4. Chapter 10 pages 261-280 Quiz (new 261-280)
5. Chapter 10 pages 280-299 Quiz (new280-299)
6. Chapter 3 pages 57-69 Quiz (new 57-69)
7. Chapter 3 pages 69-76 Quiz (new 69-76)
8. Chapter 9 pages 233-241 Quiz (new 233-241)
9. Chapter 9 pages 241-260 Quiz (new 241-260)
10. Chapter 12 pages 329-341 Quiz (new 329-341)
11. Chapter 11 pages 301-328 Quiz (new301-328)
12. Chapter 19 pages 503-530 Quiz (new 503-530)
13. Chapter 19 pages 531-544 Quiz (new531-544)
14. Chapter 16 pages 403-450 No Quiz (new 403-450)

**Lab Projects**: You will be issued a workbook the first day of class which includes the following projects: T1A, T1B, T1C, T1D, T1E, T1F, T1G, T1H, T2A, T2B, T2C, and
T2D. It is your responsibility to make sure your workbook has all of these project sheets. It is also your responsibility to not lose your workbook pages. Have the instructor grade your projects at the completion of each one. Do not assemble the component until you have orally been quizzed on that component. Turn in your projects to the instructor at the completion of each one. Individual project grades will be based on the following:

Applied knowledge of project is worth 75 percent of the project grade.

Professional conduct consists of the following and will be worth 25 percent of your grade. I will ask myself some of the following questions at the completion of each project in order for me to determine if you get full or partial credit for each. Each item is worth 5 percent.

Safety - Do you follow common shop safety procedures? Do you wear your safety glasses and personal protective equipment? Do you use tooling safely?

Horseplay – A zero tolerance policy will be enforced in the lab. If you ever have to be reminded of this, even once, you will not receive the five percent credit it is worth. An additional five percent will be deducted if in the unlikelihood that you have to be reminded of this a second time. Did you complete the project on time or did you screw off?

Record Keeping – Do you code your time cards daily and correctly? Do you keep track of your hours and projects? Do you use reference material? Is your penmanship readable?

Tools – Do you have the required tools and keep them here? Have you broken any shop tooling or equipment? Unannounced toolbox checks will be done throughout the term.

Cleanliness – Do you keep your work area clean? Do you help clean up the entire shop at the end of the day? Do you practice FOD prevention?

These are common industry standards. Any future employer you have will expect the

All projects from T1A thru T2D must be completed successfully in order to receive a passing grade for the course due to lack of repeatability. Any student who does not complete all the projects will not receive a passing grade for the class. The total of all the lab project grades will be averaged and then cut in half to account for 50 percent of the course grade.

Final Course Grade:

- Current event = 2.5% = 50 points
- Class report = 7.5% = 150 points
- Participation = 5% = 100 points
- Quizzes = 5% = 100 points
- Subject tests = 20% = 400 points
- Final = 10% = 200 points

Total lecture section = 50% = 1000 points (This number will be cut in half and the last digit dropped to end up with a number from 1 to 50 to come up with your lecture grade percentage and will be added to the lab grade percentage).

- Lab Projects = 50% =
- Total = 100% =
**Grading:** Total points achieved = 90-100=A, 80-90=B, 70-80=C, 60-70=D, <60=F.

Notes:
1. This is the classroom and lab syllabus and is to be used in conjunction with the aeronautics department syllabus that contains department wide policies and practices.
2. All syllabi are subject to change.
3. Any student with a learning or physical disability are encourage to contact the Disability Program Services at 909-652-6378
4. Plagiarism and Cheating will not be tolerated and will be dealt with according to the schools policies.
5. It is the student’s responsibility to drop the classes.
6. Tool boxes will be stored in designated areas.
7. Stools in the lab are in short supply. Be considerate and nobody owns a chair or stool here. You are no longer allowed to bring your own chair to lab or lecture. Do not move stools around from area to area. They have been designated to certain areas and need to remain there. This is to keep the lab neat and uncluttered.
8. You will be allowed to work on other projects and special projects should you complete all this session’s projects early. You will not be allowed to sit and do nothing. The instructor must see progress or you will be dropped for lack of effort.

Course Student Learning Outcomes (SLO’s)
1. Students successfully completing AMT 25 (grade "C" or higher) will have mastered the information required by the Federal Aviation Administration in the area of: Identification of Aircraft Reciprocating Engine parts
2. Students successfully completing AMT 25 (grade "C" or higher) will have mastered the information required by the Federal Aviation Administration in the area of: Identification of turbine engine parts.
3. Students successfully completing AMT 25 (grade "C" or higher) will have mastered the information required by the Federal Aviation Administration in the area of: Inspection of aircraft reciprocating engines.